## UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

Post-Effective Amendment No. 1 to Form S-8 FORM S-8 REGISTRATION STATEMENT UNDER

THE SECURITIES ACT OF 1933

# **APTOSE BIOSCIENCES INC.**

(Exact name of registrant as specified in its charter)

Canada (State or other jurisdiction of incorporation) 98-1136802 (IRS Employer Identification No.)

251 Consumers Road, Suite 1105 Toronto, Ontario Canada M2J 4R3 (Address, including zip code, of principal executive offices)

Registrant's telephone number, including area code: (647) 479-9828

Aptose Biosciences Inc. 2021 Employee Stock Purchase Plan ("Purchase Plan") Aptose Biosciences Inc. 2021 Stock Incentive Plan ("Incentive Plan") (Full titles of plans)

Aptose Biosciences U.S. Inc. 12270 High Bluff Drive, Suite 120 San Diego, California 92130 (858) 926-2730 (Name and address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

Daniel M. Miller Dorsey & Whitney LLP Suite 1070 – 1095 West Pender Street Vancouver, B.C. Canada V6E 2M6 604-630-5199 Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, anon-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act .:

Large accelerated filer	Accelerated filer	
Non-accelerated filer	Smaller reporting company	X
	Emerging growth company	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE								
	Title of Securities To Be Registered	Amount To Be Registered (1) (2)(3)(5)	Proposed Maximum Offering Price Per Share (4)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee (5)			
Common Shares								
-Purchase Plan		1,700,000						
-Incentive Plan		6,343,242						
Total		8,043,242	\$3.33	\$26,783,996	\$2,923			

## \_\_\_\_\_

Includes such indeterminate number of common shares of the registrant as may be issued to prevent dilution resulting from stock dividends, stock (1)splits or similar transactions in accordance with Rule 416 under the Securities Act of 1933.

Includes common shares of the registrant (without par value) reserved for future issuance pursuant to the Purchase Plan. (2)

Includes common shares of the registrant (without par value) reserved for future issuance as restricted stock or dividend equivalents, or upon the (3) exercise of stock options, the vesting of stock appreciation rights and the vesting of restricted stock units under the Incentive Plan.

The proposed maximum offering price per share and the registration fee were calculated in accordance with Rule 457(c) and (h) based on the average (4) high and low prices for the registrant's common shares on June 23, 2021, as quoted on the NASDAQ Stock Market.

(5) Pursuant to this Post-Effective Amendment and as further set forth in the Explanatory Note to this amendment, the Company is amending and restating the original Calculation of Registration Fee table solely to reflect the correct numbers being registered under each of the Purchase Plan and Incentive Plan, which numbers had previously been transposed in error. The total number of shares registered remains unchanged and the registration fee was previously paid in full.

### EXPLANATORY NOTE

This Post-Effective Amendment No. 1 (the "**Post-Effective Amendment**") is being filed solely to correct a typographical error in the original Registration Statement No. 333-257446 on Form S-8 (the "**Registration Statement**") filed by the Registrant with the Securities and Exchange Commission on June28, 2021.

The Registration Statement transposed the numbers registered pursuant to the Purchase Plan and the Incentive Plan. Accordingly, the Registrant hereby amends the fee table on the cover of the Registration Statement to reflect that 1,700,000 common shares are registered pursuant to the Purchase Plan and 6,343,242 common shares are registered pursuant to the Incentive Plan. The aggregate number of shares registered pursuant to the Registration Statement has not changed. Other than as set forth above, there are no other changes being made to the Registration Statement.

#### SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused the Post-Effective Amendment to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on April 1, 2022.

### APTOSE BIOSCIENCES INC.

By: /s/ Jotin Marango

Name: Jotin Marango Title: Senior Vice President and Chief Financial Officer

No other person is required to sign these Post-Effective Amendments in reliance upon Rule 478 under the Securities Act of 1933, as amended.